

ABSTRACT OF THE DISCLOSURE

A channel isolation region 42 is formed over the entire width of an N-type silicon substrate 41, and photothyristors, in each of which an anode diffusion region 43, a P-gate diffusion region 44, a cathode diffusion region 45 are formed parallel to the channel isolation region 42 over almost the entire width of the N-type silicon substrate 41, are formed in a left-hand portion 40a and in a right-hand portion 40b and are wired inversely parallel. Thus, the inter-channel movement of residual holes during commutation is restrained by the channel isolation region 42, by which commutation failure is suppressed to improve a commutation characteristic. Further, an operating current large enough for controlling a load current of approx. 0.2A is obtained although a chip is divided by the channel isolation region 42. Therefore, using this bidirectional photothyristor chip makes it possible to implement an inexpensive SSR with a main thyristor eliminated.